REMARKS

New claims 17-36 are pending in this application for the Examiner's review and consideration. Applicants have amended the specification and claims to conform with U.S. patent practice and to more clearly recite the invention. As no new matter has been added herein, these changes should be entered.

Respectfully submitted,

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Appendix A

Changes to the Specification

Rewrite the paragraph starting at page 1, line 4 as follows:

--FIELD OF THE INVENTION

The present invention relates to a direct method, and an apparatus for carrying out the said method, for the manufacture of composite sheets. It also relates to the composite products obtained.

Rewrite the paragraph starting at page 1, line 8 as follows:

--TECHNICAL FIELD

Composite sheets are usually formed from at least two materials which have different melting points and which generally comprise an organic material and a reinforcing material, the reinforcing material being, for example, in the form of threads embedded in the organic matrix. The manufacture of composite sheets generally takes a long time between the preparation of the reinforcing threads and the moment when the sheets are finally obtained, the structure used for producing the sheets usually not being the threads, as such, but complex structures incorporating the threads and requiring prior processing steps.--

Rewrite the paragraph starting at page 2, line 5 as follows:

--SUMMARY OF THE INVENTION

The object of the present invention is to provide a method which is improved, as compared with existing methods, for the manufacture of composite sheets, in particular a quicker and more economical method than the existing methods.--

Rewrite the paragraph starting at page 14, line 18 as follows:

--BRIEF DESCRIPTION OF THE DRAWINGS

Other advantages and characteristics of the invention may be gathered from the following drawings which illustrate the invention, but without limiting it, and in which:--

Rewrite the paragraph starting at page 14, line 34 as follows:

--DETAILED DESCRIPTION OF TH E INVENTION

In the method illustrated in Figure 1, a double-rapier weaving loom 1 is fed with a bundle of threads 2 (having, for example, 4 threads per cm) which come from rovings 3, the threads passing through a comb and arriving in parallel in the weaving loom (a part which is not visible and is not shown in the figure), these threads being, for example, composite threads composed of glass filaments and of polypropylene blended with one another.--

Appendix B

Currently Pending Claims

17. (New) A method of manufacturing composite sheets comprising:

providing a first bundle of parallel threads moving in a first direction;

combining the moving bundle of parallel threads with a lap of thread(s), wherein the lap of thread(s) is oriented in a second direction that is substantially transverse to the first direction, to provide a combination of threads;

heating the combination of threads, optionally applying pressure to the combination of threads, and cooling the combination of threads to provide a composite sheet; and

collecting the composite sheet,

wherein at least one of the bundle of parallel threads or the lap of threads comprises at least on organic material and at least on reinforcing material.

18. (New) The method of claim 17, wherein, the combination of threads comprises at least 10 percent of the organic material.

19. (New) The method of claim 17, wherein the reinforcing material is provided as threads that are separate from one another and not connected.

20. (New) The method of claim 17, wherein the combination of threads comprises at least 50 percent by weight of co-blended threads.

21. (New) The method of claim 20, wherein the co-blended threads comprise glass filaments and filaments of a thermoplastic material which are intimately mixed.

22. (New) The method of claim 17, wherein the lap of thread(s) is continuous and is combined with the first bundle of parallel threads with a rapier loom.

23. (New) The method of claim 17, wherein the lap of thread(s) is continuous and is combined with the first bundle of parallel threads using a weft insertion carriage and

wherein the threads of the first bundle of parallel threads and the threads of the lap of thread(s) are optionally sewn together by binding threads.

24. (New) The method of claim 17, wherein the lap of thread(s) is continuous and the combination of threads is formed by incorporating the lap of thread(s) transversely into the first bundle of parallel threads with a netting loom with weft insertion by rotary arms.

25. (New) The method of claim 17, wherein the lap of thread(s) are cut thread(s) and the combination of threads is formed by cutting the lap of thread(s) above the first parallel band of threads and allowing the cut lap of thread(s) to fall onto the first parallel band of threads.

26. (New) The method of claim 25, wherein the cut lap of thread(s) contact a deflector before falling onto the first parallel band of threads.

27. (New) The method of claim 17, wherein the lap of thread(s) is in the form of a mat and the combination of threads is formed by placing the mat on top of the first parallel band of threads.

28. (New) The method of claim 27 further comprising providing a second parallel band of threads moving in the first direction and wherein the lap of thread(s) is between the first parallel band of threads and the second parallel bands of threads.

29. (New) The method according to claim 17, further comprising introducing into the combination of threads or placing on the surface of the combination of threads one or more additional materials to provide additional reinforcement, improve the mechanical properties, protect against electromagnetic radiation, improve molding capacity, improve surface properties, or reduce the weight of the composite sheet.

30. (New) A method of manufacturing composite sheets comprising:

providing a bundle of parallel threads moving in a first direction;

combining the moving bundle of parallel threads with a lap of thread(s), wherein the lap of thread(s) is oriented in a second direction that is substantially transverse to the first direction, to provide a combination of threads;

combining the combination of threads with a second bundle of parallel threads moving in the first direction to provide a second combination of threads;

heating the second combination of threads, optionally applying pressure to the second combination of threads, and cooling the second combination of threads to provide a composite sheet; and

collecting the composite sheet,

wherein at first bundle of parallel threads, the second bundle of parallel threads, or the lap of threads comprises at least on organic material and at least on reinforcing material and at least on of the first bundle of parallel threads, the second bundle of parallel threads, or the lap of threads comprises at least two materials having different melting points.

31. (New) The method according to claim 30, further comprising introducing into the combination of threads, introducing into the second combination of threads, placing on the surface of the combination of threads, or placing on the surface of the second combination of threads one or more additional materials to provide additional reinforcement, improve the mechanical properties, protect against electromagnetic radiation, improve molding capacity, improve surface properties, or reduce the weight of the composite sheet.

32. (New) An apparatus for manufacturing a composite sheet comprising:

at least one first supplying device for supplying at least one bundle of parallel threads in a first direction into a combining device;

at least one second supplying device for supplying at least one lap of thread(s) into the combining device, wherein the combining device combines the at least one bundle of parallel threads and the at least one lap of thread(s) so that the thread(s) of the at least one lap of thread(s) are oriented in a second direction that is substantially transverse to the first direction to provide a combination of threads; and

at least one feeding device for feeding the combination of threads through at least one heating device to heat the combination of threads and at least one cooling device to cool the heated combination of threads to provide a composite sheet.

33. (New) The apparatus of claim 32 further comprising one or more of a compression device for compressing the combination of threads, a cutting device for cutting the composite sheet, or a device for collecting the composite sheet.

34. (New) The apparatus of claim 32, wherein the combining device is a rapier loom, a carriage loom, a netting loom with a weft insertion by rotary arms, or a deflector.

35. (New) The apparatus of claim 32 further comprising an accumulator or move-away bar to draw the product away from the heating device if the apparatus stops feeding.

36. A composite sheet comprising a thermoplastic organic material and at least one reinforcing thread prepared by:

providing a first bundle of parallel threads moving in a first direction;

combining the moving bundle of parallel threads with a lap of thread(s), wherein the lap of thread(s) is oriented in a second direction that is substantially transverse to the first direction, to provide a combination of threads;

heating the combination of threads, optionally applying pressure to the combination of threads, and cooling the combination of threads to provide a composite sheet; and

collecting the composite sheet,

wherein at least one of the bundle of parallel threads or the lap of thread(s) comprises at least on organic material and at least on reinforcing material and shrinkage of the composite sheet is less than 6 percent.